

ON SOME NEW LEPIDOPTERA FROM THE EAST.

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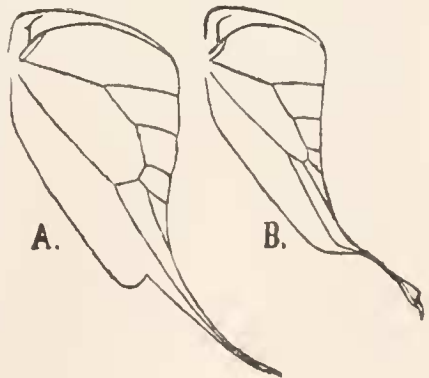
PAPILIONIDAE.

1. *Troides meridionalis*.*♂ Troides paradiseus meridionalis* Rothschild, Nov. Zool. IV. p. 180. n. 3 (1897).

WHEN describing this insect in April 1897 I had only one ♀. The distinguishing characters presented by that individual did not seem to me to justify a specific separation of *meridionalis* from *paradeus*. Towards the end of 1897 I received a second ♀, caught at the south-eastern extremity of New Guinea, near, or not far from, Samarai. Mr. A. S. Meek, who has for years been sending us very fine collections from the Papuan region, succeeded in capturing a third ♀, and had also the great luck of discovering the ♂. The three ♀♀ are all alike, except in small details. The ♂, however, is very different from what I expected it to be. As in geographical races of *Papilioninae* the ♀♀ are generally much more different than the ♂♂, the latter being often indistinguishable (compare, for instance, *Troides tithonus waigeuensis* and *tithonus*), I presumed that the ♂ of *meridionalis* would be essentially the same as that of *paradeus*. I was, therefore, very much astonished, when receiving Mr. Meek's fine capture, to find that the ♂ of *meridionalis* presented such striking differences from *paradeus* in the shape, colour, and venation of the wings that I could not hesitate to regard *meridionalis* as specifically distinct.

The forewing is narrower than in *paradeus*, its distal margin nearly straight, the anterior green streak is narrower, the posterior one wider, entering the cell and distally running up to the anterior one; on the *underside* the forewing has a broad black band, beginning at the costal margin before the middle of the cell, running to upper angle of cell, and thence to the disc, being distally limited by veins R^1 and R^3 , the yellowish green scaling between these veins reduced to two small submarginal spots; the yellowish streaks between the subcostals also reduced, the apex of the wing being black, with an ill-defined green streak of dispersed scales between SC^3 and SC^4 and a few more green scales behind SC^4 .

The outlines and venation of the hindwings of *T. paradeus* (A) and *meridionalis* (B) are represented by the accompanying diagrams. The wing of *meridionalis* is more reduced in size than that of *paradeus*, narrower, the distal margin is gently concave; the tail is shorter, not gradually narrowing to the tip, but dilated before the apex; the outline of the dilated portion when flattened out is as in figure, but appears in the specimen, on superficial examination, to be rhombiform, the tail being twisted; the anal angle is not produced; the fringe of hairs upon the abdominal fold is much longer, and not so dense. In venation



very striking differences will be noticed by comparing the diagrams. The cell is much narrower in *meridionalis*. R^3 and M^1 come from the cell, while in *paradisus* they are stalked together. The pattern of the wing is also very peculiar. The black distal border of *paradisus* is in *meridionalis* indicated only at the extreme edge of the wing: veins all yellowish green, a narrow outer border to wing and a broader streak from near base to tail in front of submedian fold also yellowish green, abdominal area up to submedian fold black, with a yellowish green streak at basal edge, and another, more distal, streak of dispersed scales gradually disappearing distally; the golden yellow area divided by the green veins, cell all golden yellow. The underside of the hindwing as above, but abdominal margin from edge to fringe of long hairs greyish white, a narrow streak of the same colour behind submedian fold, tail with yellowish green scales.

Femora (as in ♀) not striated with yellow, tibiae broader than in *paradisus*.

Length of forewing: ♂ 60 mm.

" " ♀ 72, 73 and 80 mm.

Mr. Meek caught the ♂ at Milne Bay, Brit. New Guinea, on February 4th, 1899, and the ♀ on February 13th.

The species will be figured by Mr. Grose Smith in *Rhopalocera Exotica*.

NYMPHALIDAE.

Helcyra Felder, *Sitz.-Ber. Ak. Wiss. Wien* LX. p. 450 (1860); id., *Neues Lepid.* pp. 37, 44. t. 1 (1861).

In the description of this genus Felder emphasizes as a peculiarity of *Helcyra* that the subcostal nervure of the forewing has only 4 branches instead of 5. The Indian and Chinese species of *Helcyra*, discovered after 1861, are known to possess 5 subcostal branches. Moore, who in *Lepidoptera Indica* defines the genera mostly according to the characters exhibited by the Indian species only, says that there are 5 subcostals in *Helcyra*, while Schatz, in *Fam. und Gatt. der Tagf.*, accepting Felder's statement as correct, attributes 4 and 5 subcostal branches to the genus.

We possess two specimens of *Helcyra* from New Guinea which we thought to represent apparently a geographical race of *H. chionippe*, the species upon which Felder based the genus *Helcyra*, but on examining them more closely we found that these two individuals had 5 subcostal branches, not 4 as Felder says of *chionippe*. To clear up the discrepancy we have compared the neurulation of the type of *chionippe* with Felder's figure. Felder is wrong in describing and figuring the forewing as having 4 subcostals, but there is some excuse for this error. The second branch, namely, which arises shortly after the upper angle of the cell, fuses with the third branch shortly after the origin of the latter, and thence the two veins run as one to the apex of the wing, terminating where in the individuals of *H. hemina* vein SC^3 terminates. Thus the free portion of SC^3 appears only as a short bar, overlooked by Felder, which connects the stem of $SC^{4.5}$ with SC^2 : what in Felder's figure is designated as SC^2 and incorrectly drawn as terminating far before the apex of the wing is in fact $SC^2 + SC^3$.

That peculiarity in the neurulation of the type of *H. chionippe* is the same on both forewings. The type specimen has remained unique; we can, therefore, not know whether the fusion of SC^2 and SC^3 is of normal occurrence in the Moluccan form of *H. chionippe*, but are of opinion that this is not the case.

2. *Helcyra chionippe marginata* Rothsch., subsp. nov.

Helcyra chionippe, Smith (non Felder, 1860), Nov. Zool. I, p. 356. n. 122 (1894) (Humboldt Bay); Hagen, *Jahrb. Nass. Ver. Nat. L.* p. 89. n. 135 (1897) (Simbang, Germ. N. Guinea).

Smaller than *chionippe* from Amboina. *Upperside*: black apical area of forewing relatively wider, 16—18 mm. broad behind costal margin, with a minute dot before R^2 and the trace of another before R^1 , or with three dots as in the type of *chionippe*, but the dots smaller; hindwing with a black outer-marginal band, measuring about 5 mm. between veins, the black post-discal dots M^1 — SM^2 included into the band, admarginal whitish lunules very thin, vestigial, shaded with black.

On the *underside* the brown border of the hindwing is a little narrower than the black border of the upperside.

Length of forewing: 31—32 mm.

Hab. Humboldt Bay, Dutch N. Guinea, September, October 1892 (W. Doherty), 1 ♂ (*type*); Simbang, German N. Guinea, January 20th, 1895 (Dr. Hagen), 1 ♂.

The Simbang example has three white spots in the black area of the forewing; that area is also a little wider than in the *type* from Humboldt Bay; the brown line at the edge of the apical area of the underside is rather heavier, as is also the brown discal line of the hindwing which borders the yellow band proximally.

3. *Mynes websteri histrionalis* Rothsch., subsp. nov.

Mr. A. S. Meek found at Milne Bay, Brit. N. Guinea, two pairs of this pretty species, which on examination prove to be slightly different from the examples of *websteri* from Simbang, German N. Guinea.

On the *upperside* of the hindwing the black marginal line and admarginal spots are reduced, especially between C and R^3 , the bluish white admarginal line continued to C, the black admarginal spots separated from each other; the black submarginal dots R^2 — M^2 or R^1 — M^2 marked, placed at the proximal edge of the pale glaucous blue border of the bluish white basidiscal area. On the *underside* the golden spot at the anal angle of the forewing larger than in *M. w. websteri*; the brownish black band crossing wing at apex of cell narrower upon cross-veins than in *websteri*, but suddenly dilated at costal margin, the band crossing middle of cell, stopping at C in *type*, but in the second specimen with a minute, separate spot before C.

The ♀ is similar to the ♂, larger, the outer margin of the forewing more convex, the black and the white postdiscal bands of the forewing *below* more curved between R^3 and M^2 ; the pale glaucous blue scaling of the hindwing *above* is more restricted than in the ♂, there are no black submarginal dots, the admarginal ones as in ♂.

Length of forewing: ♂, 30 mm.; ♀, 33—35 mm.

Hab. Milne Bay, Brit. N. Guinea, January and February 1899 (A. S. Meek), 2 ♂♂, 2 ♀♀.

SATURNIIDAE.

4. *Antheraea compta* Rothsch., sp. nov.

♂. Allied to *A. assamensis*. Body and wings *above* orange ochraceous, wings shaded with pink.—Forewing: basal two-thirds of costal margin fuscous, with

some whitish scaling, antemedian band rose-pink, edged with white proximally, placed as in *assamensis*, ocellus ochre-yellow, encircled by an extremely thin pinkish brown line, the proximal part of which is feebly bordered with white distally; a very small linear hyaline centre; a postdiscal black line contiguous with a white one of about half the width, almost parallel to outer margin; anteriorly stopping at SC⁵, 9 mm. from edge of wing at M², 6½ mm. at R¹; a conspicuous but small black costal spot about 6 mm. from apex; a submarginal pink patch below apex, between SC⁴ and SC⁵, outwardly bordered by a broad brick-red line; outer edge clayish buff, fringe more clay-colour.—Hindwing: ocellus as in *assamensis*, larger, its proximal portion black, outer portion ochre-yellow, a white line in cell, about 3 mm. distant from black wing of ocellus, continued to abdominal margin, heavily bordered with rose-red distally, this red colour touching the ocellus; a very faint orange band between ocellus and abdominal margin, being the continuation of a similar band on the forewing, which touches the ocellus of the forewing at the outer side; a black and white submarginal line as on forewing, faintly bordered with pink proximally, terminating before R¹, not curved towards base, almost quite straight, situated about midway between ocellus and outer margin, crossing M¹ 9 mm., SM² 6 mm. from edge of wing, the latter coloured as on forewing; the marginal area outside the black and white line orange on both wings, crossed by the yellow veins.

Underside similar to *assamensis*, brighter in tint.

Hab. Khasia Hills, Assam, 8 ♂♂, no ♀.

AGARISTIDAE.

5. *Phalaenoides aequalis salomonis* Rothsch., subsp. nov.

♀. Much larger than the other forms of *aequalis* (*dohertyi*, *coeruleotincta*, *aequalis*).

Wings, above.—Forewing: white spot in cell minute, band rather wider than in *dohertyi*, not concave proximally, indented upon M¹ distally, but R³ and M¹ not wholly black; discal and submarginal blue spots distinct.—Hindwing: the two white patches fused together, the central patch being enlarged basad.

Underside.—Forewing: cell-spot smaller, and band wider, than in *dohertyi*.—Hindwing: central patch dilated basad, including a small black spot at proximal side of upper cross-vein; blue discal spots C—M² large, except spots R¹—R³. White fringe of abdominal segments short above and below.

Length of forewing: ♀, 26 mm.

Hab. Tugela, Solomon Islands (Woodford), 1 ♀.

6. *Phalaenoides fractus* Rothsch., sp. nov.

♂. Similar to *aequalis*, but differs as follows:—First and second segment of palpi white beneath, not yellow, third shorter than in *aequalis*; underside of abdomen not banded black, in ♂ long hairs at apex of 8th segment, and extreme base and tip of claspers black not orange, claspers clayish ochreous, the harpe less curved than in *aequalis*.

Forewing: band more curved than in *aequalis dohertyi*; all the veins traversing it black, last partition the longest, blue discal spots much more distal than in *aequalis*, the series consisting of only 3 to 5 dots, which stand midway between

the white band and the blue submarginal dots, and are situated *upon* the veins like the submarginal ones, not *between*. On hindwing the central white spot stands separate from the cross-veins, the second white spot is more transverse, being narrower than in *aequalis*, the two spots farther apart, a heavy blue streak at base upon M. On the *underside*, the hindwing is devoid of blue discal spots : the brush of hairs upon M of the forewing partly yellow.

Length of forewing : ♂, 18 mm. ; ♀, 19 mm.

Hab. Kapaur, Dutch N. Guinea, December 1896 to January 1897 (W. Doherty), 1 ♂ (*type*) ; Milne Bay, Brit. N. Guinea, December 1898 (A. S. Meek), 2 ♂♂ ; Queensland, 1 ♂, 2 ♀♀.

AGANAIDAE.

7. *Asota albiluna* Rothsch., sp. nov.

♂. Similar to *A. versicolor* Don., but forewing, *above*, with one small white costal spot at base, separated by a heavy black spot from a white band of $1\frac{1}{2}$ mm. width, which expands between costal margin and SM² ; instead of the discal band of *versicolor* there is a white half-moon upon the cross-veins, about $4\frac{1}{2}$ mm. long, 2 mm. broad ; on *underside* the half-moon is much smaller ; abdomen *below* with a series of black dots on each side which are not fused to bands ; harpe of clasper less spoon-shaped than in *versicolor*.

Length of forewing : ♂, 28 mm.

Hab. Milne Bay, Dutch N. Guinea, October 1898 (A. S. Meek), 1 ♂.

ZYGAENIDAE.

8. *Aphantoccephala centralis* Rothsch., sp. nov.

♂ ♀. Body dark greenish blue above and below, glossy, somewhat purplish, especially the underside of the abdomen.

Wings above like body, each with a white patch in centre ; patch of forewing in or before middle, longer than broad, not reaching either costal or internal margin ; patch of hindwing also not reaching the edges of the wing, often ill-defined, sometimes indistinct.

Underside less blue than upperside, patches as above, but a little larger and generally clearer defined.

Subcostals of forewing individually variable in position, SC⁵ absent ; R² and R³ from a point or shortly stalked, R¹ sometimes stalked with SC^{3,4} ; R¹ of hindwing absent, upper cross-vein at right angles to C.

Length of forewing : ♀— $13\frac{1}{2}$ mm.

Hab. New Guinea, Louisiade Archipelago, d'Entrecasteaux Islands, and Woodlark Island ; several subspecies, as follows :—

8a. *A. centralis centralis* Rothsch.

♂. Patch of hindwing *above* distinct, on *underside* extending to C ; patch of forewing 2 to 3 mm. broad, proximal of base of M².

Length of forewing : ♂ ♀, 11—12 mm.

Hab. Milne Bay (*type*), November 1898 and January 1899 (A. S. Meek), 6 ♂♂, 2 ♀♀ ; Fergusson Island and d'Entrecasteaux Islands, November and December 1894 (A. S. Meek), 5 ♂♂ ; Woodlark Island (A. S. Meek), 1 ♀.

The Woodlark Island individual is much larger than all our other specimens (forewing measuring $13\frac{1}{2}$ mm.), and represents most likely a separate subspecies: the base of the forewing is green; on the left forewing SC^2 is fused with $SC^{3,4}$, but branches off again close to tip of SC^3 , on the right forewing SC^2 comes from the upper angle of the cell and SC^3 is absent.

8b. *A. centralis diluta* Rothsch., subsp. nov.

♂. Patches of both wings larger than in the preceding subspecies; that of forewing measuring over 3 mm. in breadth, reaching the base of M^1 and expanding from C to beyond SM^2 .

Length of forewing: ♂, $9\frac{1}{2}$ mm.

R^1 of forewing stalked with $SC^{3,4}$, R^2 and R^3 on a short stalk.

Hab. Kapaur, Dutch N. Guinea, December 1896 (W. Doherty), 1 ♂.

8c. *A. centralis suffusa* Rothsch., subsp. nov.

♂ ♀. Patch of hindwing *above* suffused with black, sometimes absent, small on *underside*, anteriorly not reaching beyond cell-vein.

Length of forewing: ♂, 9— $11\frac{1}{2}$ mm.; ♀, 10—12 mm.

Vein SC^3 of forewing often absent.

Hab. Louisiade Archipelago: Rossel Island (*type*), March 1898 (A. S. Meek), 5 ♂♂, 3 ♀♀; St. Aignan, September and October 1897 (A. S. Meek), 4 ♂♂, 4 ♀♀.

9. *Aphantocephala moluccarum* Feld., *Sitz.-Ber. Akad. Wiss. Wien*

XLIII. p. 30. n. 65 (1861).

♂ ♀. *Body above*, breast and legs bistre brown: *upperside* of antennae and abdomen, violet purple, glossy; *underside* of abdomen yellow, except the apex, which is glossy purple. Wings uniformly bistre brown on both sides, iridescent in side-light, semidiaphanous.

SC^5 of forewing absent, SC^3 and SC^4 stalked together; R^1 of hindwing absent, upper cross-vein at right angles to C, or its upper end pointing distad.

Length of forewing: ♂, $8\frac{1}{2}$ — $9\frac{1}{2}$ mm.; ♀, 10 mm.

Hab. Described by Felder from Amboina; W. Doherty, in February 1892, found 2 ♂♂ and 1 ♀ of this species on the same island.

10. *Caprima spectabilis* Rothsch., sp. nov.

♂. Face, anterior part of collar, tegulae in front of wings, extreme edges of tergites of abdomen, legs and underside of abdomen pale yellow, rest of body brownish black, somewhat purplish, thorax above and below with some metallic glaucous blue scales.

Wings, upperside, black.—Forewing with a yellow band from costal margin, which it does not quite reach, across end of cell to M^2 ; the band is straight, widest in front, about 2 mm., its inner edge crosses M at or before base of M^2 .—Hindwing: a large yellow patch extends from the base to the disc, the patch is limited posteriorly by SM^2 , about 1 mm. distant from outer edge at M^2 , rounded outwardly, obliquely cut off between R^1 and R^3 .

Underside black, both wings with a metallic blue subapical band.—Forewing : yellow band much broader than above, longer, almost reaching posterior angle of wing ; costal margin yellow from base to band, a yellow basal streak in cell.—Hindwing : yellow area dilated basally to abdominal margin.

♀. Like ♂, larger, band of forewing broader, reaching posterior angle, only the extreme edge of the wing remaining black ; yellow area of hindwing extended basally to abdominal margin. On *underside* the yellow band and area are also wider than in ♂, the blue subapical band developed to a complete submarginal band ; costal edge of forewing blue at base, retinaculum yellow. Head, thorax, and legs (above and below) more metallic blue than in ♂, face brown, with some blue scales.

Length of forewing : ♂, 13 mm. ; ♀, 17—20 mm.

Vein SC³ of forewing mostly present, stalked with SC⁴ and SC⁵, much more distal than SC⁵.

Hab. Milne Bay, British New Guinea, a number of specimens of both sexes, collected by A. S. Meek in October, November and December 1898.

11. *Caprima obliqua* Rothsch., sp. nov.

♂. *Body above* metallic pansy purple ; abdomen less bright than thorax, more coppery ; head, except a patch upon occiput, underside of body, legs, yellow, upperside of tarsi and the basal half or two-thirds of abdomen fuscous, with purple gloss, shaft of antennae violet purple.

Wings, upperside, black, shot with purple, especially in side-light.—Forewing : two oblique, parallel, yellow bands, not reaching costal margin, the first 3 mm. from base in front, stopping at SM², the second somewhat broader, 1½ mm. wide, rounded off at ends, crossing cell beyond base of M², stopping at M².—Hindwing : a large yellow patch, rhomboidal, reaching base behind cell, borders of wing all black, except extreme base of abdominal margin, the black outer border of even width (⅔ mm.) from M¹ to SM¹, suddenly widened before R³, the whole costal and apical area, inclusive of upper part of apex of cell, black.

Underside purplish black, yellow markings larger than above.

♀. Like ♂, yellow markings a little larger.

R¹ of forewing shortly stalked with SC^{4,5}, SC³ absent.

Length of forewing : ♂, 12 mm. ; ♀, 12½—14 mm.

Hab. Milne Bay, British New Guinea, November and December 1898 (A. S. Meek), several specimens of both sexes.

Easily distinguished from *C. mutilata* Walker, *List. Lep. Het. Brit. Mus.* xxxi. p. 121 (1864) & Swinh., *Cat. Lep. Het. Oxford* I. p. 61. n. 266. t. 2. f. 15 (1892), by the colour of the head and legs and the narrow, oblique, antemedian band of the forewing.

12. *Caprima aurantiaca* Rothsch., sp. nov.

♂. *Body above* and *below* black, glossy blue, head (except a patch on occiput behind antennae) and legs buff, tarsi and end of tibiae fuscous on upperside with blue gloss.

Wings above black, purple in side-light.—Forewing : a large orange yellow patch 1½ mm. from base, between costal and internal margins, not reaching edges of wing, subrotundate, about 2 mm. broad, a second patch between SC² and M²,

reddish orange, convex outwardly, straight or concave proximally, oblique, tapering behind, sometimes stopping short at M^1 , just entering apex of cell, measuring about 2 mm. along R^1 .—Hindwing : greater part of wing occupied by a large orange yellow patch which extends from costal margin to SM^2 , reaches nearly the base and is rounded distally ; black outer border nearly 3 mm. broad in front, $\frac{1}{2}$ mm. wide between M^2 and SM^2 .

Underside as above, but with scarcely any purple reflections ; orange patches larger than above, that of hindwing nearly reaching abdominal margin.

♀. Larger than ♂, the patches of the forewing large; subapical band extended in front to near costal margin and posteriorly beyond M^2 . Face fuscous with blue gloss, luteous only at mouth ; occiput darker than in ♂, legs also more fuscous than in ♂, the inner- and underside being luteous, the rest fuscous.

R^1 of forewing from upper angle of cell, R^2 and R^3 from a point or stalked together, SC^3 absent.

Length of forewing : ♂, 10 mm. ; ♀, 12 mm.

Hab. Sudest Island, Louisiade Archipelago, April 1898 (A. S. Meek), 3 ♂♂, ♀♀.

13. *Caprima albifrons* Rothsch., sp. nov.

♀. *Body above* black, somewhat glossy with metallic purple ; face white, tegulae with a white or buffish dot in front of wings, inner- and underside of legs clayish.

Wings above black, slightly purplish in side-light.—Forewing : a large yellow patch $1\frac{1}{2}$ mm. from base, between costal and internal margins, its outer edge forming almost a right angle, the point of which lies upon M at or near base of M^2 , width of patch $4\frac{1}{2}$ mm. along M , $2\frac{1}{2}$ mm. behind costal margin (extreme edge of wing black), and 4 mm. at internal margin ; a second, orange rufous, patch in apical area, strongly convex outwardly, straight or slightly rounded proximally, between SC^2 and M^2 , 3 mm. broad at R^1 , its distal and costal edges parallel to distal and costal margins of wing, the patch a little nearer the costal than the distal margin.—Hindwing : a large yellow patch, as prolongation of the yellow patch of the forewing, occupies the basal half of the wing, but does not quite reach the base, abdominal margin also remaining black ; it is triangular, the distal point of the triangle near the tip of SM^2 , outer edge of patch slightly concave ; black outer area 4 mm. wide in front.

Underside black ; the yellow patches larger than above, that of forewing joined along cell-vein to subapical patch, which is orange.

♀. Unknown.

R^1 , R^2 , R^3 of forewing from cell.

Length of forewing : ♂, 10—11 mm.

Hab. New Hanover, Bismarck Archipelago, February and March 1897 (Capt. H. C. Webster), 4 ♂♂.

14. *Caprima fragilis* Rothsch., sp. nov.

♂. *Body and legs* yellow, meso- and meta-thorax above, and antennae black with purplish metallic gloss, abdomen above (except four first tergites), black with blue gloss.

Wings above black, reddish purple in side-light.—Forewing : outer margin longer than in the preceding species, the wing more elongate, a yellow, irregular, oblique band from SC^2 to middle of internal margin, $3\frac{1}{2}$ mm. broad behind, shallowly excavated in cell, rather deeply biconcave outwardly, between costal end of band and R^2 , and again between R^3 and SM^2 .—Hindwing : triangular, outer margin strongly oblique, yellow band continued to abdominal margin ; band outwardly again biconcave, base purplish black.

Underside, as above, band very little wider.

♀. Like ♂.

Veins SC^3 and SC^5 (or SC^3 and SC^5 ?) of forewing absent from ♂, SC^5 present in ♀ ; R^1 , R^2 , R^3 from cell ; R^1 of hindwing absent from both sexes, R^3 and M^1 rather widely separate.

Length of forewing : ♂, $11\frac{1}{2}$ mm., ♀, $11\frac{1}{2}$ mm.

Hab. Ron I., Geelvink Bay, Dutch New Guinea, July 1897 (W. Doherty), ♂ ♂, 1 ♀.

15. *Caprima dohertyi* Rothsch., sp. nov.

♀. *Body above* purplish black ; face, collar, *underside* of the abdomen, especially at the apex, femora and tibiae, especially the posterior ones, creamy, with an opalescent gloss.

Wings above purplish black.—Forewing : a large yellow patch from SC^1 to internal margin, $6\frac{1}{2}$ mm. broad before SM^2 , its outer edge straight in middle, slightly oblique ; a second, ferruginous red, patch, or rather band, from costal margin, which it does not touch, to SM^2 , tapering behind, somewhat widened basad in upper angle of cell, hence broadest between R^1 and R^2 , inner edge of this band straight from R^2 to SM^2 , at right angles to the veins, outer edge strongly rounded in costal region, then nearly straight, veins within band black, except base of R^2 .—Hindwing : yellow area of forewing continued to abdominal margin, the extreme edge of the margin and the base remaining black, the yellow patch rounded behind, somewhat angled upon SM^2 , distally straight, faintly concave before R^1 , black outer area gradually decreasing in width abdominad, 4 mm. broad in front.

Underside similar to upperside, the patches slightly paler ; hindwing with a greenish plumbeous patch of 3 mm. length between costal margin and SC^2 in apical angle.

Length of forewing : ♀, 16 mm.

Hab. Kapaur, Dutch New Guinea, January 1897 (W. Doherty), 1 ♀.

16. *Doclea dohertyi* Rothsch., sp. nov.

♂. *Body above* black, very slightly glossy, neck, anterior edge of mesothorax and some scales upon centre of same, and the underside yellow, bases of abdominal segments purplish black ; antennae purple, but proximal and distal sides of branches buff.

Wings above black, not glossy, marked with orange ochraceous.—Forewing : basal half orange yellow, this area extending to near base of M^2 , but costal and internal edges and vein M black, the black colour of internal margin reaching SM^2 at base for a distance of 4 or 5 mm., the yellow area consisting of two large partitions, one in cell, the other beyond, the latter rounded off distally.—Hindwing :

costal margin, except at apex, outer half of cell, two small patches between R^2 and M^2 , orange ochraceous, these patches all fused together; an indistinct patch between M^1 and M^2 , another, rather large one, behind M^2 , stand separate.

Underside black, not glossy.—Forewing: orange ochraceous from base to beyond M^2 , costal edge black, M not black, vestiges of two yellow patches between R^3 and M^2 .—Hindwing: greater part orange ochraceous, the black colour reduced to the abdominal and outer margins, yellow area limited posteriorly by SM^2 , but there are some yellow scales near anal angle, and SM^3 is also yellow, black outer marginal band dilated between C and R^2 , here about 5 mm. broad, only $1\frac{1}{2}$ mm. wide between R^2 and M^2 , slightly dentate behind M^1 and M^2 . SC^1 and SC^2 of forewing close together, SC^3 absent, SC^4 and SC^5 stalked together, R^2 and R^3 on a short stalk, or from a point; R^1 of hindwing present, originating rather close to SC^2 .

Length of forewing: ♂, 22 mm.

Hab. S. Celebes, August and September 1891 (W. Doherty), 2 ♂♂.

17. *Doclea fumigata* Rothsch., sp. nov.

♂ *Body above* black, thorax and antennae with purple gloss; collar, neck, and sides of abdomen yellow, underside of abdomen and legs fuscous, the latter purplish in side-light (breast apparently yellow laterally, but too much denuded of scaling to allow a determination of the colour).

Wings above brownish black, semidiaphanous, especially the hindwing, iridescent; forewing reddish purple in side-light with vestiges of three white spots, one in upper angle of cell, and two on disc between R^3 and M^2 .

Underside somewhat paler than upperside, both wings with ochraceous scales in cell, which, however, do not form distinct patches; dirty white spots of forewing as above, but somewhat larger.

Neuration as in the species of *Doclea* from the Sula Islands, figured in Swinhoe, *Cat. Lep. Het. Oxford* I. p. 60. t. 2. f. 10 (1892) under the name of "*D. syntomoides* Walker," but SC^2 of forewing closer to stalk of SC^{3+4} than to SC^1 .

Length of forewing: ♂, $12\frac{1}{2}$ mm.

Hab. S. Celebes, August and September 1891 (W. Doherty), 1 ♂.

18. *Pintia celebensis* Rothsch., sp. nov.

♂. Head, thorax, and shaft of antennae bluish green, metallic, abdomen purplish black, edges of segments bluish green; face, breast, abdomen and legs buffish cream-colour, sides of breast and upperside of tibiae partly metallic blue-green.

Wings above blackish brown, purplish in side-light.—Forewing: a creamy buff band between C and M^1 crossing apex of cell, oblique to costal margin, at right-angles to distal margin, which the band, however, does not reach, consisting of two somewhat rounded patches which touch each other at R^2 , the band thus resembling the number 8.—Hindwing: veins slightly darker than ground of wing, indications of buffish patches on disc before apex of cell and between R^2 and M^1 .

Underside blackish brown.—Forewing: costal edge greenish blue with a long creamy streak in basal half, a streak in cell and a broader behind cell also cream-colour, ill-defined, band as above, a little wider, more yellow, with an additional,

small, spot behind M^1 .—Hindwing: basal two-thirds of costal margin cream-colour, a broad streak in cell also creamy, changing into pale yellow distally, the whole abdominal area yellowish cream-colour, slightly shaded with fuscous purple, a line before SM^1 fuscous purple, four discal spots pale yellow, the uppermost between C and R^1 nearly rounded, the other three standing in a row between R^2 and M^2 , becoming gradually more elongate, spot R^2 — R^3 more distal than spot C— R^1 .

Length of forewing: ♂, 22 mm.

Hab. Toli-Toli, North Celebes, November—December 1895 (H. Fruhstorfer), 1 ♂.

19. **Herpa meeki** Rothsch., Nov. Zool. III. p. 325. n. 12, ♀. (1896) (Woodlark).

♂. Smaller than ♀; body above all green, neck with a thin reddish ochraceous ring, below creamy white, slightly yellowish in front, tibiae and tarsi brown, with some blue scales.

Wings above purplish black.—Forewing: greenish blue at base, a creamy white band across disc, about $2\frac{1}{2}$ mm. broad in cell, rounded costally, tapering towards posterior angle, stopping at SM^2 , 2 mm. from tip of that vein.—Hindwing: abdominal area metallic blue, but outer half or two-fifths of cellule M^2 — SM^1 black; a triangular patch across apex of cell creamy white, produced to base behind costal margin.

Underside more extended blue; forewing with a blue spot near apex, hindwing with a blue submarginal band.

Length of forewing: 18 mm.

Hab. Woodlark Island, 2 ♂♂, 5 ♀♀ collected by A. S. Meek, partly in 1895, partly in April 1897.

20. **Herpa albivitta** Rothsch., sp. nov.

♂. *Body above* metallic green or blue, abdomen more black; *underside*, breast metallic green-blue, abdomen yellowish buff.

Wings above.—Forewing: purplish black, with a narrow creamy white band from C to SM^1 , tapering behind, crossing M at M^1 or beyond, posterior part shaded with purplish black scaling; base with a short green streak.—Hindwing black, not purple, a triangular patch from near base to M^1 or R^3 , posteriorly limited by SM^2 , anteriorly by the cell-vein, either smoky grey or white.

Underside black, both wings with metallic blue scaling, especially in costal area, outer marginal area not blue, band of forewing broader and longer, patch of hindwing wider than above, white.

Vein SC^1 of forewing free, or anastomosed with C, or fused with it.

♀. Larger than ♂. *Wings above*.—Forewing purplish black, streaked with metallic green at the base; a broad white band from costal to internal margin in middle of wing, somewhat dilated basad posteriorly, about 5 mm. broad, the band not reaching the extreme edges of the wing.—Hindwing all black, or abdominal area grey, especially towards anal angle, this grey scaling condensed between base of M^2 and SM^2 to a white patch, or the wing all black with an indication of the white patch behind base of M^2 .

Underside.—Forewing: band wider than above, base and disc at outside of band metallic blue.—Hindwing shaded with metallic blue, but outer margin and a space of variable width before middle black, the grey and white scaling as above, or more extended, mostly absent.

Vein SC¹ of forewing free.

Length of forewing : ♂, 15—16 mm. ; ♀ 20—21 mm.

Hab. New Guinea.. Two local races.

20a. ***Herpa albivitta fumosa*** Rothsch., subsp. nov.

♂. Band of forewing curved, its inner edge crossing M just at base of M¹ : basi-median area of hindwing smoky grey above, reaching base ; body above dark metallic green.

Hab. Dorey, Dutch N. Guinea, June 1897 (W. Doherty), 1 ♂.

20b. ***Herpa albivitta albivitta*** Rothsch.

♂. Band of forewing straight from C to M² or SM¹, crossing M a little beyond M¹ ; hindwing with a white patch above, which does not reach the base ; body above greenish blue, abdomen with few metallic scales, purplish black.

♀. See above.

Hab. Milne Bay, British New Guinea, a series of both sexes, collected by A. S. Meek in November and December 1898.

21. ***Herpa acrita*** Rothsch., sp. nov.

♀. *Body above* metallic greenish blue, breast and femora also scaled greenish blue, abdomen beneath pale buff ; middle branches of antennal joints about 1½ mm. long.

Wings above purplish black.—Forewing : metallic blue scales at base, especially upon SC ; a white band of nearly even width, 3 mm., gently curved, expanding between costal and internal margin, bordered with blue at both sides, its inner edge crossing M at base of M², its outer edge at SM², 2 mm. from tip of that vein.—Hindwing : the greater part of the wing occupied by a white patch extending from SC to abdominal margin and almost reaching the base, externally rounded, the black outer border of the wing tapering towards anal angle, 7 mm. broad at R¹, just entering apex of cell, 2 mm. wide at SM².

Underside as above, but much shot with metallic blue, except at outer margin.

SC¹ of forewing fused with C.

Length of forewing : ♀, 23 mm.

Hab. Etna Bay, Dutch New Guinea, July 1896 (Capt. H. C. Webster), 1 ♀.

22. ***Herpa stigma*** Rothsch., sp. nov.

♂. *Body above* blue, thorax and underside of abdomen purplish ; collar and tip of abdomen orange.

Wings above and below brownish black, somewhat diaphanous, rather obviously reddish purple ; forewing with a white, somewhat oblique, spot between C and R¹, not quite reaching costal edge, about 2 mm. from apex, diameters about 1½ and 2 mm. Vein R¹ of forewing stalked with SC^{3,4,5}, R² and R³ on a short stalk ; middle branches of antennae about 2 mm. long.

Length of forewing : ♂, 20½ mm.

Hab. Toli-Toli, North Celebes, November—December, 1895 (H. Fruhstorfer), 1 ♂.

23. *Histia libelluloides*.

♂ ♀. *Gynautocera libelluloides* Herr.-Schäff., *Auss. Schmett.* p. 7 (and on cover) t. 31. f. 11. 12. 13 (1850-53) (Java).

Histia selene Walker (non *Chalcosia selene* Kollar, 1844), *List. Lep. Ins. Brit. Mus.* II. p. 413. n. 2 (1854) (pt. ; Java) ; Moore, *Cat. Lep. Ins. E. I. C. II.* p. 312 (1859) (*syn. ex parte* ; Java) ; Kirby, *Cat. Lep. Hct. I.* p. 55. n. 2 (1892 (pt. ; "E. Indies" !).

♀. *Histia vacillans* Walker, *l.c.*, p. 413. n. 3 (1854) (Java).

♂. *Gynautocera selene*, Herr.-Schäff., *l.c.*, p. 57. t. 77 (1855-58) (Java).

♀. *Gynautocera vacillans*, *id.*, *l.c.*

♀. *Histia albimacula* Hampson, *Moths of India I.* p. 280. n. 598 (1892) (♀ Java, non ♂ Burma).

♀. *Histia libelluloides*, Kirby, *l.c.*, p. 55. n. 4 (1892) (Java).

In this species the sexes are different, the *female* having a buffish white band across the hindwing which is absent from the *male*.

Walker wrongly identified a *female* of this species with Kollar's *Chalcosia selene* from Kashmere, and described another *female* specimen as *H. vacillans*. Herrich-Schäffer, who had previously figured and named the sexes of the present insect as *libelluloides* ♂ ♀, afterwards accepted the two names given by Walker, calling the ♂ *selene* and the ♀ *vacillans*. In *Moths of India I.* Sir George Hampson correctly treated Kollar's *selene* as being the same species as *Gynautocera rhodope* Cramer, 1775, = *flabellicornis* Fabr., 1775, but considered the white-banded ♀ from Java to be that sex of *H. albimacula*, the ♂ of which came from Burma.

We have *H. libelluloides* from Sumatra, Java and Lombok. The individuals from the three islands present the following slight differences :—

23a. *H. libelluloides sumatrana* Rothsch., subsp. nov.

♂. Abdomen more extended red, the black spots of the sternites absent or minute, red spot at anterior margin of mesonotum very small.

Wings above as in the Java form ; but the brownish grey streaks upon the veins of the forewing less clearly defined ; *underside* of both wings less black, the cellules more shaded with metallic pale glaucous blue than in the Java subspecies, the hindwing especially being more extended blue ; the black streaks between the veins of the forewing nearly reach the outer margin, being longer than in *lib. libelluloides*, and are less well defined.

♀. *Hindwing above* more extended pale glaucous blue, nearly the whole area from cell to abdominal margin being occupied by this colour ; the buffish white band is broad and enters the cell in two out of our three individuals, in the third specimen the band touches the apex of the cell, and its upper partition, (C—SC², is obsolete. On the *underside* the wings are more metallic than in the Java race, especially the abdominal region of the hindwing ; the outer area of the forewing is less pale and the band of the hindwing is broader at and beyond M² than *lib. libelluloides*.

Hab. Setinjak, W. Sumatra, May and June 1898 (*type*, ♂) and Padang Sidempoean, W. Sumatra (Ericsson), 5 ♂♂, 3 ♀♀.

23b. *H. libelluloides libelluloides* Herr.-Schäff, *l.c.*

The band of the hindwing of the ♀ is variable in width, but does not seem to ever enter the cell on the upperside, though it occasionally does so below ; the band

reaches always to C, even in the specimens in which its width does not exceed 3 mm.

The position of the last three subcostal branches of the forewing, which are stalked together, namely, SC³, SC⁴, SC⁵, is not constant. In the ♂ SC⁵ stands nearer the cell than SC³, this latter vein and SC⁴ forming a fork, but the distance between the points of origin of SC⁵ and SC³ is very variable. In most ♀♀ the position of SC³ and SC⁵ is normal, in one example SC⁵ is about 1 mm. distant from SC³, while in two others SC³ branches off before SC⁵, SC⁴ and SC⁶ forming the distal fork.

Hab. Java: Mt. Gede (Prillwitz. leg.: received from Herr Frhstorfer); coll. Felder; 10 ♂♂, 8 ♀♀.

23c. *H. libelluloides lombokensis* Rothsch., subsp. nov.

♀. *Wings above*.—Forewing: black basal area less extended than in the preceding races, the apex of the cell down to M² being as pale as the outer area of the wing.—Hindwing: basal area nearly all pale glaucous blue; band broad, entering cell, its proximal edge faintly concave or straight, crossing M at or before M¹.

Underside.—Both wings somewhat more extended greenish blue than in *sumatrana*; apex of cell of forewing and disc paler than the outer marginal area, this pale scaling almost forming an ill-defined discal band.

Length of forewing: 31–33 mm.

Hab. Sapit, Lombok, 2000 feet, May–June 1896 (H. Fruhstorfer), 2 ♀♀.

24. *Gynautocera virescens reducta* Rothsch., subsp. nov.

♂♀. *Hindwing, above*, deeper green than in the individuals from the Southern Moluccas, the green colour, moreover, less extended in cell and towards base, the greater part of the cell being black. On the *underside* the bluish green scaling is also reduced, the abdominal area of the hindwing, especially, being more black than bluish green.

The black basal rings of the sternites of the abdomen are narrower than the red portions of the segments.

Hab. Batchian, March 1892 and August, September 1897 (W. Doherty), 5 ♂♂, 1 ♀; also on Morty and Halmahera (Mus. Brit. and Oxon.).

In this form SC² of the forewing is sometimes stalked with SC^{3,4,5}, and R² and R³ are on a short stalk in all six specimens. Two ♂♂ have R², and the ♀ R¹ of the left forewing forked.

Walker, in *List Lep. Ins. Brit. Mus.* XXXI. p. 111 (1864), records *G. virescens* from Timor. This locality is, we think, erroneous. The specimen was contained in a collection purchased by the British Museum from Mr. Stevens; the collection was said to be made by Mr. Wallace in Timor. However, in this same collection there were a good many species which are known only to occur in the Northern Moluccas. As the supposed Timor individuals, for instance, of *Charaxes latona* and *Bordeta quadriplagiata*, do not differ from examples obtained in the Northern Moluccas, while it is well known that extremely few forms are identical on

Timor and the Northern Moluccas, we have no doubt that the locality "Timor" of the collection mentioned before was erroneous, the specimens having been obtained by Wallace most likely on Batchian or Ternate.

25. *G. virescens buruensis* Rothsch., subsp. nov.

♂ ♀. A very large form, resembling *G. pavonina*, described by Dohrn from Sumatra.

Wings above.—Forewing: outer margin concave; greenish black, veins in outer half pale greenish olive buff.—Hindwing: azure blue, faintly shot with green, base black for the greater part, this colour forming an ill-defined streak in cell along M; disc with indications of black patches between veins, patch M¹—M² distinct in ♂, outer margin much less rounded than in *virescens reducta* and *v. virescens*, almost straight in ♂.

Underside.—Forewing: black, veins blue, except SC^{1.2.3}; outer half of cellule SM¹—SM² pale azure blue.—Hindwing: cell black, middle line blue, costal margin black, except distally; abdominal area black in basal half, this colour extending more distad between than upon the veins; rest of wing blue, but there are three large black discal patches between R² and M².

Length of forewing: ♂, 41 mm; ♀, 44 mm.

Hab. Mt. Mada, Buru, 3900 ft., September 1898 (Dumas), 1 ♂, 1 ♀.

26. *G. virescens celebensis* Rothsch., subsp. nov.

♂ ♀. *Wings above* resembling *buruensis* in colour, shorter, hindwing more rounded; hindwing black from base to apex of cell, mesial line of cell and outer third of wing blue, four black patches between R¹ and M² separated from each other by the rather thin blue veins, and limited basally by the blue cross-veins.

Underside purplish black.—Forewing: basal two-thirds of costal margin, outer part of cell-vein and subcostals thinly, veins R¹—M² broadly, glaucous blue; outer half of cellule SM¹—SM² also glaucous blue.—Hindwing: outer marginal area glaucous blue, somewhat creamy at veins R² to M¹, the blue colour extending proximad along veins, separating two patches from the purplish black basi-discal area, a third patch between M¹ and M² not completely isolated, the base of vein M² and partition M¹—M² of M not being blue; cross-veins blue; mesial line of cell very thinly blue; the blue scaling in abdominal area restricted to outer margin, but extending down a little along veins.

Length of forewing: ♂, 33 mm; ♀, 31—38 mm.

Hab. S. Celebes, August, September 1891 (W. Doherty), 1 ♂ (*type*), 1 ♀; Samanga, S. Celebes, November 1895 (H. Frhnstorfer), 1 ♀.

COSSIDAE.

27. *Xyleutes maculatus* Rothsch., sp. nov.

♀. This species is closely allied to *X. boisduvali* mihi, but can be distinguished at a glance by its much more ashy grey colour due to the wings being powdered with black scales instead of red.—Forewing: ashy grey, paler towards the apex and

on disc, a long streak in cell and a series of elongated patches from veins $SC^{u,6}$ to SM^2 black ; this series crosses the wing just beyond the cell almost parallel to outer margin. Between cell and SM^2 is a large black patch divided by the submedian fold, situated between the transverse series and base of wing, but nearer the former. A second series of spots, mostly linear and longitudinal, are situated near the outer margin. The spot between R^1 and R^2 of outer series is angulate.—Hindwing : brownish black instead of clay-brown as in *X. boisduvali*.

Underside : centre of both wings much more blackish than in *X. boisduvali*, on forewing the submarginal row of spots shows through. Body as in *X. boisduvali*, but meso- and metathorax greyish black, instead of whitish grey, abdomen above much blacker.

Length of forewing : 102 mm.

Breadth „ „ 38 „

Hab. Taylor Range, Brisbane district, Queensland (Mr. Dodd *leg.*).

This species can easily be distinguished from *X. sordida* mihi by the black ring to the thorax which it has in common with *X. boisduvali*.
